

Probing the World of the Project Student

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ABSTRACT

Many papers describe the processes involved in undertaking a capstone project. Most of these, however, take an external view, that of curricula design, assessment strategy or project structure. This paper describes an attempt to better understand the reality of the project student's world. Students were given a domestic probe in the form of a disposable camera. It was hoped that use of the cameras to record the events and surroundings of the project would promote critical thought and encourage reflection on the project tasks. Examples are described that demonstrate a diversity of aspects of the projects as a sub-culture.

1. INTRODUCTION

Most ICT degree programmes contain a capstone project course, and much has been written that attempts to unravel the complexities of undertaking such a course (Clear, Young, Goldweber, Leidig, & Scott, 2001). The project demands time, engagement and a considerable effort from the student. Other authors have explored the effects of project selection (Clear *et al.*, 2001), methodology (Mann & Smith, 2004b) and assessment (Fincher, Petre, & Clark, 2001) on capstone project courses. However, little is recorded of the many hours of student lives that are played out in project workrooms and homes each semester. In an attempt to better understand the reality of the project student's world, this paper describes the use of a "domestic probe" (Gaver, 1999) in the form of a disposable camera. It was hoped that use of the cameras to record the events and surroundings of the project would promote critical thought and encourage reflection on the project tasks.

The capstone project is a 40 credit full year course, generally carried out in groups during the third year of the Bachelor of Information Technology. A multitude of factors, including the

effectiveness of project methodologies (Mann, and Smith 2004b), selection of a suitable project (Mann & Smith, 2004a) and the dynamics of the project group (Scott, Tichenor, Bisland, and Cross, 1994) all influence the outcome of the project.

Progress during the project is determined through the use of regular presentations, peer reviews and "scrum meetings". Clear (1999) describes the capstone course as having a "maturing, confidence-building effect on the students" which can be enhanced by encouraging students to self-reflect on their projects. It was with a view to improving this reflection on the projects and the process that the authors decided to introduce the use of a "cultural probe" to the repertoire of third year project activities.

2. CULTURAL PROBES

Cultural probes have been used in several design projects, for example the Presence Project (Gaver, 1999), as a device for collecting contextual data. They are intended for release into the environment, to return at a later point with responses generated by the subjects themselves:

"Essentially, cultural probes are objects or artifacts that are purposefully designed to provoke, reveal and capture the motivational forces that shape individual and his or her home life" (Hemmings, 2002).

Gaver (1999) used a variety of cultural probes in his project exploring the interaction of the elderly in their local communities. Participants received a pack, which included stamped pre-addressed postcards with key questions, maps with stickers and dots to be used to represent favourite spaces, photograph albums and diaries. Of particular interest to the authors was the use of a disposable camera with a list of requested





Figure 1: Disposable cameras with customised prompts

images – capturing the domestic worlds of the elderly residents. This component of the Domestic Probe was adopted and altered to suit the capstone project.

The disposable cameras supplied to each project group were designed to encourage either action (“a testing time”), critical reflection on the projects, or both, by indirectly asking such questions as: what are we doing?, who are we doing it for?, exploring themes of before/after, timeframes, teams and emotions.

In contrast to employing a photographer to record the project experience, probes give control to the students, allowing them to tell their stories indirectly, without obtrusive technology. The choice of disposable cameras was deliberate, requiring each shot to be carefully framed and selected. Digital images would have provided too many opportunities for manipulation in the quest for perfection.

2. METHODOLOGY

Twenty student groups were each assigned a disposable camera. The camera was repackaged to display a label indicating specific requests for images. Repackaging the cameras not only allowed a customised label, but also is intended to dress the camera in a fun mode, less technical than crafted. As Hemmings (2002) describes in the use of domestic probes in the Lancaster study, sometimes the probes proved to be too much fun, resulting in ‘rude’ photographs. Several groups included photographs of toilets in their selection. Student humour, presumably, intended to represent “their project in a nutshell” or “our workspace”?

The photo requests: (see Figure 1)

- Our workspace
- View from our workspace
- The story of our project (3 pictures)
- Our team in action
- Our team in inaction
- One month to go
- One week to go
- One day to go
- Finished
- A testing time
- What our client wanted
- What the client got
- Handover
- Helpers
- Our paper work
- Our product in use
- We are proud of this
- We learnt from this
- Our project in a nutshell

Some photos were unassigned for the students to add their own images. The cameras were returned and, after removal of the customised and completed labels, were sent for processing. Photographs from the processed films were then studied. The documentation for each project was also examined for reference to the photographs or to the process of taking them.

Given that the primary intention of the probes was to encourage reflection in the student groups, the collection of photographs was essentially irrelevant. The cameras had served their purpose. However the captured images also told the story of the projects, and offered an opportunity to analyse for images that could indicate practices and environments that could



Figures 2 and 3: Workspaces



Figure 4: Fuzzy computer



Figures 5 and 6: Finished product

be indicators for successful project outcomes. Although we found no documented evidence of improved critical reflection, project marks were on average improved on previous years (Mann & Smith, this volume).

The opportunity for photo analysis was restricted due to the difficulty of linking the student records of the images with the actual photographs. The method of collection (disposable cameras) produced a poor mapping between image numbers recorded on the camera by students and the numbers printed on the negatives. As students could take the photos in any order, and often took additional unrecorded images, even identifying a few images on each film did not assist with positive identification for the remainder. Other management issues resulted in some packs of photos being incomplete, some camera labels were missing and most packs were out of order. These issues could be remedied in the next iteration by requesting a date for each photo and perhaps a brief rationale. Image quality was often poor, with inadequate lighting causing dark, fuzzy images.

3. BEHIND THE PROJECT ROOM DOOR

The project students, not always in accordance with the instructions, took a great variety of photographs. Some groups recorded the human experience; others captured the paper war. The

process of photographing sometimes prompted a visual description of the project - a visual executive summary. Somewhat unexpectedly the collected images also describe a sub-culture not always evident from the usual project documentation.

Of those photos returned and identified, a range of approaches was taken. Most groups did not take any images outside the project room, a statement perhaps of the inwardly focused world of the project students. Images of the workspaces also showed a certain similarity (Figures 2 and 3), being primarily in the same room, and the view from the workspace was often of the next student group. Occasional groups seemed to be aware of the existence of the outside world and took pictures of the view from the window of the second floor project room.



Figure 7: Calendar

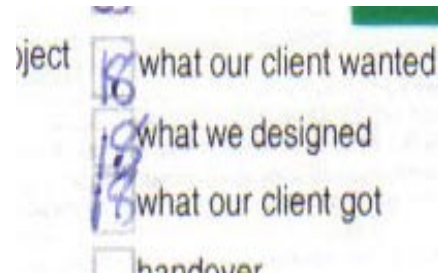


Figure 9: Client got what he wanted



Figure 8: One week to go



Figure 10: Ladder tableau

The request for a photograph of the finished product was often taken literally, with a shadowy image of a computer screen (Figure 4), or of a compact disk. While some groups held their product proudly (Figure 5), others showed the disk sitting on a desk (Figure 6).

The countdown to handover, generally a source of much stress in the project class, was literally illustrated by one group with a photograph of an annotated calendar (Figure 7). Many groups chose this point to show an image of stressed group members, head down over computer workstations, surrounded by the detritus of coffee cups and takeaway packets (Figure 8).

The difference between what the client wanted and what the client got was apparently insignificant for many groups, who photographed the same object for both. Possibly by handover date the groups are not willing or able to admit to having failed to meet client expectations, however justified. One student clearly felt he had met the client's needs well, by submitting the same photograph for all three of these prompts (Figure 9).

'People who helped us' showed a collection of friends, children and staff members using the products, generally in the project room. This was an example where, due to the difficulty in

identifying the photographs, the purpose of the image was not clear. These images could have also represented 'a testing time' or 'our product in use'.

Apart from one intriguing tableau, (Figure 10), originality and humour did not feature strongly in the photographs, somewhat surprising given the diverse personalities involved. Possibly the students saw the cameras as just another chore in their busy lives.

With the use of the domestic probes, a view of the sub-culture of the "Project Room" has been captured. In a space which students generally make their own over the period of the academic year, group norms are being created, rules established and roles played out. Within the photographs are symbols that became significant to group members over the duration of the project, creating group memories that will last longer than the project documents and disks. One group's photographs are marked by the presence of a couple of koosh balls in almost every shot (Figure 11). Another group used a teddy bear as a 'victim' for their bungy experiments, and have shown the bear in a variety of poses (Figure 12). Mentioning the bear to several graduates months later provoked a burst of bear memories, not all of them pleasant for the bear.



Figure 11: Koosh mouse

Gaver (2004), in his use of domestic probes, does not advocate a detailed analysis of the returned material, explaining “whereas most research techniques seek to minimize or disguise the subjectivity of this process through controlled procedures or the appearance of impersonality, the Probes purposely seek to embrace it.” The photographs express the stories of the project groups, and would require further contextual information for a full representation. A possibility for further research is to use the photographs to elicit a verbal commentary from the students, thus gaining a better understanding of their experiences. In one informal interview, simply producing the photographs was sufficient stimulus for an insightful discussion on the culture in the project room. The images prompted happy memories of “the best experience of the whole BIT” (graduate, personal communication), touched with an element of mourning for a phase of her life which no longer existed.

4. CONCLUSION

Introduced as a tool to encourage critical reflection, the cultural probe exercise has provided a source of data that lends itself to multiple interpretations. An impressionistic ethnographic approach was used in the initial analysis of these “tales from the field” (Van Maanen, 1988), which could be extended using in depth interviews. A deeper understanding of the dynamics of the project experience could benefit all parties, allowing improved workspaces to be designed, appropriate support systems introduced and the provision of targeted resources.

Cameras will be issued again to project students in Semester 2, 2005 with some fine-tuning of the methodology, particularly with respect to



Figure 12: Bungee bear

the collection of detailed image data. Future ethnographic studies of the project sub-culture are planned.

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